

REMARKS

Claims 1 and 3-32 are pending in this application. Claims 4, 6-10, 12-22, 24, 25 and 27-31 stand withdrawn. By this Amendment, claim 2 is canceled without prejudice to or disclaimer of the subject matter recited therein. Claims 1, 3, 5, 8-21 and 23-27 are amended. The amended withdrawn claims are revised due to a typographical error. No new matter is added.

I. Claim for Priority

Acknowledgement of receipt of the certified copies of the priority documents filed on March 17, 2004, is respectfully requested.

II. Figures

The drawings are objected to under 37 C.F.R. §1.83(a) for allegedly failing to show the feature of the mounting board recited in the claims. At least Figs. 14A, 18A and 18B show the mounting board 182. Therefore, withdrawal of the objection to the drawings under 37 C.F.R. §1.83(a) is respectfully requested.

III. Non-Statutory Obvious Type Double Patenting

Claims 1-3, 23, 26 and 32 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 11 and 12 of copending U.S. Patent Application 10/735,676. As claim 2 is canceled, the provisional rejection of that claim is moot. The provisional rejection of claims 1, 3, 23, 26 and 32 is traversed.

Claims 1, 2, 11 and 12 of copending U.S. Patent Application 10/735,676 fail to render obvious the subject matter of the provisionally rejected claims. For example, claims 1, 2, 11 and 12 fail to disclose or suggest a piezoelectric oscillator, comprising: a plurality of leads formed of two lead frames; and terminals formed on said plurality of leads said terminals being at least connection terminals to connect with a piezoelectric resonator and mounting

terminals to mount to a mounting board; said connection terminals formed on one of said lead frames on one side; said mounting terminals formed on the other of said lead frames on said other side; said connection terminals and said mounting terminals distanced one from another being arrayed in multiple tiers in a direction substantially perpendicular to a main plane of the lead frame; said piezoelectric resonator formed by sealing a piezoelectric resonator element within a resonator package being mounted on said connection terminals; an IC forming an oscillating circuit being mounted on said lead frame; and said lead frame and said piezoelectric resonator being sealed within said package such that the principal surface of said mounting terminals are exposed outwards, thereby forming a resin package. Therefore, withdrawal of the rejection is respectfully traversed.

Claims 1-3, 11, 23, 26 and 32 are rejected under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims 1-12 of U.S. Patent No. 6,917,142. As claim 2 is canceled, the rejection of that claim is moot.

A Terminal Disclaimer in compliance with 37 C.F.R. §1.321(b) and (c) is filed concurrently herewith (copy enclosed). Therefore, withdrawal of the rejection is respectfully requested.

IV. Claim Rejections Under 35 U.S.C. §102

Claims 1 and 32 are rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,912,592 to Kikushima; and claims 1, 2 and 32 are rejected under 35 U.S.C. §102(b) as anticipated by JP 2002-330027 to Koichi. As claim 2 is canceled, rejection of that claim is moot. The rejections of claims 1 and 32 are respectfully traversed.

Neither Kikushima nor Koichi disclose each and every feature recited in the rejected claims, as amended. For example, neither of the applied references disclose a piezoelectric oscillator, comprising: a plurality of leads formed of one or more two lead frames; and terminals formed on said plurality of leads and distanced one from another being arrayed in

said connection terminals formed on one of said lead frames on one side; said mounting terminals formed on the other of said lead frames on said other side; said connection terminals and said mounting terminals distanced one from another being arrayed in multiple tiers in a direction substantially perpendicular to a main plane of the lead frame; as recited in amended claim 1.

Kikushima relates to a piezoelectric oscillator having a resonator, which comprises a piezoelectric like element, and a semiconductor integrated circuit apparatus, such as and IC or an LSI, which is connected to the resonator (col. 1, lines 5-9). As shown in Figs. 26A-26C, the piezoelectric oscillator 30 comprises a ceramic package 31 having a cover 39 and a piezoelectric element 53. A piezoelectric oscillator 30 includes a third layer 36 having lead patterns 78 and 38 between a first layer 32 and a second layer in which a piezoelectric element 53 is disposed on a stepped portion 33 of the ceramic package 31 (col. 21, line 64 - col. 21, line 31). Thus, as can be seen from at least Fig. 26A-26C of Kikushima, the reference fails to disclose terminals formed on the plurality of leads being at least connection terminals to connect to a piezoelectric resonator and mounting terminals to mount to a mounting board.

It is alleged in the Office Action that the terminals 77 of Kikushima correspond to the mounting terminals recited in the rejected claims. However, there is no such description of the terminal 77. Although it is alleged in the Office Action that the recitation of the mounting board is not shown in the figures and therefore no details of the mounting board are given, such an assertion is incorrect. As indicated above, the mounting board 182 is clearly shown in the figures of the specification.

It is further alleged that the first layer 32, third layer 36 and electroconductive pattern 38B in the second layer correspond to leads of the lead frame. However, as described at col. 1, line 6, of Kikushima, the lead patterns are described as reference nos. 78, 38. Thus,

Kikushima fails to disclose connection terminals and mounting terminals distance from one another being arrayed in multiple layers in a direction substantially perpendicular to a main plane of the lead frame. Thus, Kikushima fails to disclose each and every feature recited in the rejected claims.

Koichi relates to a temperature-compensation oscillator which may be readily miniaturized (paragraph [0001]) of Koichi. In Koichi, a planer terminal board 17 is formed of a plurality of lead terminals 17 (A-F) arranged on a plane. Thus, as shown in at least Figs. 2 and 3 of Koichi, the piezoelectric oscillator only includes one lead frame. Additionally, the connection terminals of the lead terminal 17F and the mounting terminals of the lead terminals 17B-17E are not arrayed in multiple tiers in a direction substantially perpendicular to a main plane of the lead frame, as recited in the rejected claims. Accordingly, Koichi fails to disclose each and every feature recited in the rejected claims. For at least these reasons, withdrawal of the rejections of claims 1 and 32 under 35 U.S.C. §102(b) is respectfully requested.

V. Claim Rejections Under 35 U.S.C. §103

Claims 1-3, 11, 23, 26 and 32 are rejected under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 6,917,142 to Koyama. The rejection is respectfully traversed.

Koyama may not be used to provide a basis of rejecting the pending claims under 35 U.S.C. §103(a) as the reference only qualifies as prior art under 35 U.S.C. §102(e). As recognized in the Office Action, "This rejection might also be overcome by showing that the references disqualified under 35 U.S.C. §103(c) is prior art in a rejection under 35 U.S.C. §103(a)."

In order to be disqualified as prior art under 35 U.S.C. §103(c), the subject matter which would otherwise be prior art to the claimed invention and the claimed invention must be commonly owned at the time the claimed invention was made. The term commonly

owned is intended to mean that the subject matter which would otherwise be prior art is entirely or fully owned by the same persons or organization at the time the invention was made, or subject to an allegation of assignment to the same persons. To establish common ownership, a statement asserting that the application and patent were at the time of the invention jointly owned or subject to common assignment is sufficient. Applicants submit that this U.S. patent application (10/729,010) and the applied reference of Koyama (U.S. Patent No. 6,917,142) were, at the time the invention of application 10/729,010 was made, owned by Seiko Epson Corporation. Accordingly, withdrawal of the rejection of the claims 1-3, 11, 23, 26 and 32 under 35 U.S.C. §103(a) is respectfully requested.

Claims 3, 5, 11, 23 and 26 are rejected under 35 U.S.C. §103(a) as unpatentable over Koichi in view of U.S. Patent No. 5,463,253 to Waki et al. (hereinafter "Waki"). The rejection is respectfully traversed.

Neither Koichi nor Waki, whether considered alone or in combination, disclose or suggest each and every feature recited in the rejected claims, as amended. For example, the combination of references fails to disclose or suggest a piezoelectric oscillator including a layered lead frame, comprising: two lead frames; connection leads to connect with a piezoelectric resonator being formed on one of said lead frames on one side and said connection leads have an inclined portion, the inclined portion of the connection leads being erected to one said side so as to form connection terminals; mounting leads to mount to a mounting board are formed on the other of said lead frames on said other side and said mounting leads have an inclined portion, the inclined portion of the mounting leads being erected to the other side so as to form mounting terminals; and an IC forming an oscillating circuit being mounted on said layered lead frame, said piezoelectric resonator formed by sealing a piezoelectric resonator element within a resonator package being mounted on said layered lead frame; and said layered lead frame and said piezoelectric resonator being sealed

within a resin package such that the inclined portions of the connection lead and the inclined portion of the mounting lead are sealed internally and that the principal surface of said mounting terminals are exposed outwards, thereby yielding a completed article, as recited in amended claim 3.

It is admitted in the Office Action that Koichi is silent on whether or not the lead 17 is from a single lead frame or a plurality of lead frames. In an effort to overcome the admitted deficiency, Waki is combined for allegedly providing this missing feature. It is further alleged that it would have been obvious to combine the teachings of Waki with Koichi to one of ordinary skill in the art to make more accurate bends through the use of two lead frames each bent in a respective direction.

Applicants submit that it would not have been obvious to make such a combination as the intended purpose of Waki is to decrease the amount of space inside the package structure (col. 1, lines 57-60). Accordingly, Waki teaches away from the use of two lead frames and therefore it would not have been obvious to make a combination as alleged in the Office Action.

Moreover, Koichi's lead terminals 17B-E are formed by erecting the lead frame at a right angle twice. This formation allows the erected portion to be longer thereby addressing the problem in the process of creating the lead frame. In contrast to the teachings of Koichi, amended claim 3 recites that the mounting leads have an inclined portion and that the mounting terminals are formed by raising the inclined portion of the mounting leads toward the other side. In this manner, a thin piezoelectric oscillator can be realized.

Additionally, the lead terminal 17B-E of Koichi have erected portions that are exposed outside of the resin package. In contrast, the inclined portion of the mounting leads recited in the amended claims indicate that the terminals are sealed inside resin. Therefore, even accepting the combination provided in the Office Action, the combination of references

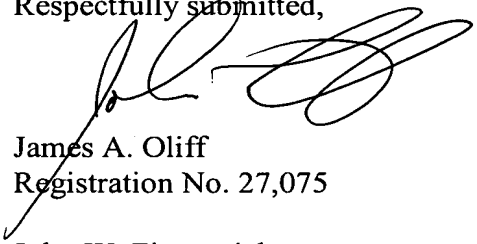
fails to disclose each and every feature as recited in the amended claims. Accordingly, withdrawal of the rejection of claims 3, 5, 11, 23 and 26 under 35 U.S.C. §103(a) is respectfully requested.

VI. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1 and 3-32 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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JAO:JWF/lbg

Attachment:
Terminal Disclaimer

Date: December 20, 2005

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DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461
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